ABSTRACT OF THE DISCLOSURE

An electron emission element according to the present invention comprises a substrate, and a plurality of protrusions composed of diamond and protruding from the substrate. Each protrusion includes a columnar portion, the side face of which forms an inclination of approximately 90° relative to the surface of the substrate, and a tip portion, which is located on the columnar portion having a spicular end. A conductive layer is formed on the upper part of each columnar portion, and a cathode electrode film, which is electrically connected to the conductive layer, is formed on the side face of the columnar portion.